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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,370	08/22/2001	Guenter W. Brune	DCI-21	7678

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BOULDER PATENT SERVICE INC
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EXAMINER

AURORA, REENA

ART UNIT PAPER NUMBER

2862

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/934,370

Applicant(s)

BRUNE ET AL.

Examiner

Reena Aurora

Art Unit

2862

-- The MAILING DATE of this communication appears on th cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 91 is/are pending in the application.
- 4a) Of the above claim(s) 48 - 91 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 - 24 and 31 - 47 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 6 and 25 is/are rejected.
- 7) ☒ Claim(s) 2, 4 and 26 - 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of group I in Paper No. 4 is acknowledged.
2. Claims 48 – 91 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 5, 6 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercer (5,914,602) in view of Mercer (5,933,008).
5. As to claims 1 and 25, Mercer discloses a system for tracking the positional relationship between a boring tool and in-ground lines including a boring tool (52) transmitting a boring tool locating signal; a cable (34) transmitting a cable locating signal; measuring the intensities (58) of the boring tool locating signal and cable locating signal and using the measured intensities to determine a positional relationship between the boring tool and the cable (Note Fig. 2, Abstract, Summary of the invention and Column 7, Line 62 – Column 8, line 1). Mercer fails to disclose establishing a pitch orientation of the boring tool and using established pitch orientation with the measured intensities to determine the positional relationship between the boring tool and the

cable. Mercer'008 discloses boring technique using locate point measurements for boring tool depth determination where pitch of the boring tool is determined and using the determined pitch and the measured signal strength the distance between the surface and the boring tool is determined. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify the device of Mercer in view of Mercer'008 to use pitch orientation with the measured intensities to determine the positional relationship between the cable and boring tool since it is known in the art use the pitch orientation for accurate determination of position relationship.

6. As to claims 3, 5 and 6, Mercer discloses a system for tracking the positional relationship between a boring tool and in-ground lines as explained above. Mercer further shows a display for displaying the positional relationship (Note Fig. 6).

Allowable Subject Matter

7. Claims 2, 4 and 26 - 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: As to claims 2, 4 and 26 – 30, the prior art fails to show boring tool exhibiting a forward locate point at the surface of the ground and the positional relationship is being determined including the forward locate point in scaled relation to the boring tool and the cable.

9. Claims 7 – 24, 31 - 47 are allowed.

10. The following is an examiner's statement of reasons for allowance: As to claims 7, 24 and 31, the prior art fails to show a system in which a boring tool is moved through the ground and establishing a drilling direction extending through the forward locate point; moving the locator along a locating direction to a first point; measuring first set of intensities and establishing a reference angle between drilling direction and locating direction at a first point; moving the locator to a second point, measuring second set of intensities; establishing a pitch orientation of the boring tool and using the measured first and second sets of intensities and the established pitch orientation, determining a positional relationship to relative scale including at least the boring tool and the cable. These features taken together with the other limitations of the claims renders the claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art of Record


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wilcock (5,150,056) is cited for its disclosure of a method and device for locating the longitudinal axis of a branch pipe from a main pipe.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 703-605-1372. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 703-308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Reena Aurora
June 26, 2003


N. Le
Supervisory Patent Examiner
Technology Center 2800